

Application No.: 10/816,305
Amendment dated: April 27, 2005
Reply to Office Action of January 27, 2005
Attorney Docket No.: 0020.0001.con

b.) Remarks

Claims 1-27 are pending in the Application.

Applicants note with appreciation the allowance of Claims 13-27.

Claims 1-4 and 7 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Adams et al. (US Patent Number 4,130,018, hereinafter referred to as Adams). Applicants respectfully disagree for the following reasons.

For an obviousness rejection to be proper, the Patent Office must meet the burden of establishing a prima facie case of obviousness. The Patent Office must meet the burden of establishing that all elements of the invention are disclosed in the cited publications, which must have a suggestion, teaching or motivation for one of ordinary skill in the art to modify a reference or combined references.¹ The cited publications should explicitly provide a reasonable expectation of success, determined from the position of one of ordinary skill in the art at the time the invention was made.² It is respectfully asserted that Adams does not suggest, teach or motivate one of ordinary skill in the art to come up with Applicant's invention as claimed in Claim 1. Also to establish prima facie obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art³.

Adams uses a piezoelectric crystal 15 to generate acoustic waves passing into a matching medium, 16 and 17. The matching medium is composed of an acoustically transmissive window layer 16 and an acoustically transmissive diaphragm layer 17. Passing first through the window layer 16 and then through the diaphragm layer 17, the acoustic waves enter a gap 31 and, finally, a tube 13.

¹ *In re Sang Su Lee*, 277 F.3d 1338, 61 USPQ2d 1430 (Fed. Cir. 2002).

² *In re Fine*, 5 U.S.P.Q.2d 1596, 1598 (Fed. Cir. 1988); *In re Wilson*, 165 U.S.P.Q. 494, 496 (C.C.P.A. 1970);

Amgen v. Chugai Pharmaceuticals Co., 927 U.S.P.Q.2d, 1016, 1023 (Fed. Cir. 1996);

³ *In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974). See also MPEP 2143.03 (Rev. 2, May 2004).

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In Adams, the matching medium has the thickness equal to one or an odd number of quarter-wave lengths of the characteristic period of crystal in the matching medium. The window layer 16 is composed of a synthetic polymer material. The primary purpose of the diaphragm layer 17 is protection of inner parts of the device. The gap 31 in combination with apertures 20 provides a passage between the gas inside the tube 13 and outside the tube 13. See Adams, column 2, lines 23-24, 35-39, and 50-62, and column 3, lines 12-14, 16-18, and 51-56.

A device according to Applicants' Claim 1 uses a transducer body 2 with an element 27 to generate acoustic waves passing through a transducer membrane 6 into an acoustic matching unit 9. The acoustic matching unit 9 has a cavity 10 and a diaphragm 11 with a channel 14. Passing first through the cavity 10 and then through the diaphragm 11 with the channel 14, the acoustic waves enter the waveguide cavity 4. See Applicants' Specification, Page 11, lines 17-20, 25-27.

The Patent Office has stated that in Adams "[t]here is a portion between the housing (12) and the tube (13) which is used to match the acoustic signal that comprises a diaphragm (17) and a cavity (31) coupled to the waveguide"; in other words, according to the Patent Office, in Adams, the gap 31 in combination with the diaphragm layer 17 teaches or suggests the Applicants' acoustic matching unit 9 comprising the cavity 10 and the diaphragm 11 with the channel 14 as claimed in Applicants' Claim 1. Applicants respectfully disagree.

The diaphragm 11 of Applicants' Claim 1 has an opening 14, which distinguishes it from diaphragm layer 17 in Adams. Nowhere in Adams could there be found a teaching or a suggestion of an opening in the diaphragm as claimed in Claim 1. Moreover, nowhere in Adams could there be found a motivation to come up with the opening in the diaphragm as claimed in Applicants' Claim 1.

The diaphragm 11 of Applicants' Claim 1 couples the cavity 10 to the waveguide cavity 4, which also distinguishes it from diaphragm layer 17 in Adams. Adams does not teach or suggest the diaphragm coupling the two cavities because the diaphragm layer 17

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in Adams is not between the cavity 31 and the tube 13, but rather on the side of the cavity opposite the tube 13.

The acoustic matching unit 9 of Applicants' Claim 1 comprises the cavity 10, which distinguishes the cavity from the gap 31 in Adams. Adams does not teach or suggest the acoustic matching unit comprising a cavity, (a) because the gap 31 serves only as a passageway (together with the apertures 20) for maintaining gas pressure equilibrium between the inside and the outside of the tube 13, as shown in Fig. 3 in Adams and (b) because, in Adams, the gap 31 is not a part of acoustic matching unit or matching medium and does not participate in acoustic matching in any way.

If an independent claim is nonobvious under 35 U.S.C. 103, then any claim depending therefrom is nonobvious⁴.

Claims 2-4 and 7 are nonobvious for the same reasons as independent Claim 1.

Claims 5, 6, and 8-12 have been objected to as being dependent upon a rejected base Claim. Applicant asserts that since Claim 1 is allowable, dependent Claims 5, 6, and 8-12 are believed to be in the condition for allowance.

Applicants believe that the present application is in condition for allowance. A Notice of Allowance is respectfully solicited. Should any questions arise, the Examiner is encouraged to contact the undersigned.

Respectfully submitted,

HOUSTON ELISEEVA LLP

By Maria M. Eliseeva
Maria M. Eliseeva
Registration No.: 43,328
4 Militia Drive, Ste. 4
Lexington, MA 02421
Tel.: 781 863 9991
Fax: 781 863 9931

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⁴ *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988).